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Improved Teaching of Aerosol Therapy; Evaluation of Patient Performance

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This paper relates how to optimise inhalation therapy in CF patients.
Inhaling a medication doesn't automatically imply that the medication reaches the intended area. The prescription of aerosol therapy must include specific teaching for the patient and regular evaluation of patient performance and devices used.
As routine sets in over time, and because of the complex control of breathing required during inhalation therapy, patients need to be helped and followed up regularly.
For these reasons, we created an assessment session using a questionnaire, once a year to check patient's knowledge and technique concerning inhalation therapy and the devices used.
We propose to describe the way we carry out the assessment sessions and questionnaire used.
The session includes a time for assessment and a time for education.
We evaluate

- The devices used (appropriateness, recent model or not, reliable performance)
- Patient's practice (use of device, preparation of treatment, hygiene)
- Breathing technique (slow and deep , taking a pause before expiration)
- Patient's knowledge (concerning drug used, benefits of the inhalation therapy, reasons for special breathing techniques)
- Patient's daily organisation (to plan aerosol therapy at the best time according to his physiotherapy session)
- Patient's compliance to inhalation therapy

This paper concludes that prescription of aerosol therapy needs to be followed up throughout the treatment course. It requires professional intervention so that the patient can be taught and can take part in his therapeutic education. Although we know that the patient mental image of treatment effect has an impact on his compliance, his knowledge and understanding of this specific treatment will lead to improvement.
Evaluation of patient performance is necessary to achieve these goals.

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Home nebulizer cleaning practices: evaluation and improvement in adults with CF

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The use of aerosolized medications is reported among 75% of patients with CF[1]. Bacterial contamination of home nebulizers may be a source of bacterial infection of the lower airways[2]. Regular cleaning can reduce bacterial contamination.
Aims. We evaluated home nebulizer cleaning practices to have a better understanding of the maintenance, to simplify and to improve it according to the recommendations.
Methods. A survey was designed to gain information regarding routine practices, regarding nebulizer cleaning and disinfection. The survey was completed by the patient and a nurse who validated technical aspects.
Results. 33 patients completed the survey. 5 patients (15%) used single-use nebulizers and were excluded. 28 patients (12 females) (mean age 26.8 yr [range 19-41]) had a prescription for 1 to 5 aerosolized medications per day. 19 patients (57%) said they follow the prescription. Patients (22), or relatives (4) or both (2) were in charge of the reusable nebulizer maintenance. Cleaning by washing with water and soap prior to disinfecting was done by 8 patients (28%). 10 patients (36%) disinfected nebulizers with validated methods. The nebulizer drying methods were dry paper towel (16), air dry (9) or hair drier (1). The average time per day dedicated to home nebulizer cleaning practices was 12 minutes (range 0-40).
Conclusion. Many patients were not cleaning (72%) even not disinfecting (64%) their nebulizers. Simplification and standardization of nebulizer maintenance are needed. Domestic steam disinfector (NUK®) could be a convenient method to provide nebulizer disinfection. Compliance to this method has also to be evaluated.

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Relationship between Six-minute Walk Test Distance and Coordination in Cystic Fibrosis

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The purpose of this study was to investigate the relationship between functional capacity, and peripheral muscle strength, and coordination in patients with cystic fibrosis (CF). Fifteen patients (mean 14.7 ± 3.5 years, 10 M, 5 F) with clinically stable CF participated in this study. Functional capacity was measured using six-minute walk test (6MWT). Heart rate, fatigue and dyspnea perception using Modified Borg Scale before and after the test. Balance and coordination were determined using timed up and go test. Quadriceps muscle strength was evaluated using a hand-held dynamometer. The 6MWT distance was significantly related with timed up and go test time (r= -0,59, p= 0,02). It was significantly correlated with quadriceps muscle strength (r= 0,62, p= 0,014). Timed up and go test performance was not significantly related with quadriceps muscle force. In conclusion, 6MWT performance is related with coordination and quadriceps muscle strength in CF patients.

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Rates and Reasons for Non-compliance to Home Physiotherapy in Cystic Fibrosis

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Non-compliance with prescribed therapy is a major problem in a chronic disease. This study aims to provide rates and reasons for non-compliance to home physiotherapy in cystic fibrosis (CF). This study used modified version of the Manchester cystic fibrosis compliance questionnaire with a modified health perception component. 34 CF (mean age 12,5± 3,8, range 6-19, 18 M, 16 F) patients' parents were included in the study. The patients attending with their families visited outpatient clinic significantly more often than the patients attending outpatient clinic by themselves (u= 73,5, p= 0,012). Number of daily treatments were significantly higher among the patients visiting the outpatient clinic with their parents (u=139,5, p= 0,006). Daily treatments were irregular in 19 patients who attended the therapies without their parents. It was seen that 14 patients' regular treatments were performed by their parents (u=76,00, p= 0,038). If the parents agreed with their children about the amount of prescribed home treatment, parents believed that they performed enough physiotherapy (u=13,5, p=0,022). Reasons for non-adherence were to rely on someone to help (%10), forgetting by children (%12), finding the treatment difficult (%10) and boring to perform (%14). When establishing the home physiotherapy treatment a planned parent and child collaboration is an important consideration.